

Appl. No. 09/839,510
Amdt. Dated January 7, 2005
Reply to Office action of November 3, 2004
Attorney Docket No. P14506-US1
EUS/JJP/05-1007

Amendments to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1-19. (Cancelled).
20. (Currently Amended) A method for demodulating a data sequence, said method comprising:
- identifying any one of a predetermined plurality of interference cancellation demodulation schemes;
 - loading the data sequence in a first register;
 - transferring the data sequence within the first register to a second register at predetermined time instances based upon the interference cancellation demodulation scheme identified;
 - despreading the data sequence in the second register using a user code;
 - respreading the despread data sequence;
 - updating the first register based upon the respread data sequence; and
 - after said despreading, selectively accumulating the despread data sequences in an accumulator, the contents of said accumulator comprising the demodulated data sequences.
21. (Original) The method according to claim 20, further comprising:
- repeating the steps of transferring, despreading, respreading, updating and selectively accumulating, a predetermined number of times.
22. (Currently Amended) An interference cancellation unit (ICU) for demodulating a data sequence, said ICU comprising:
- a first shift register containing a data sequence, and a second shift register containing at least one code for a user associated with said data sequence; and

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a multiplier having inputs connected to outputs of said first and said second shift registers, said multiplier multiplying contents of said first and second shift registers, whereby said first shift register, said second shift register and said multiplier are controlled to perform despreading and resspreading operations.

23. (Original) The ICU according to claim 22, further comprising:
a switch adapted to select an operation performed by said multiplier.

24. (Original) The ICU according to claim 22, further comprising:
an accumulator for accumulating the despread signal generated by said multiplier, said accumulator connected to the first shift register for supplying the despread signal to said first shift register during a resspreading operation.

25. (Original) The ICU according to claim 22, wherein said second shift register stores the user specific code used for the despreading operation.

26. (Currently Amended) An interference cancellation method for canceling the interference on a data sequence, said method comprising the steps of:

receiving the data sequence;

detecting an estimate of a first spreading code's symbols from said data sequence using an interference cancellation unit (ICU);

storing the estimate of said first spreading code's symbols in a first register associated with said first spreading code's symbols; and

detecting an estimate of a second spreading code's symbols from said data sequence;

storing the estimate of said second spreading code's symbols in a second register associated with said second spreading code's symbols; and

~~subtracting a first signal associated with the estimate of said first spreading code's symbols from said data sequence to produce a modified data sequence~~

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subtracting signals associated with the estimate of said first spreading code's symbols and said second spreading code's symbols from said data sequence to produce a modified data sequence.

27. (Cancelled)

28. (Original) The interference cancellation method according to claim 26, further comprising, after said step of subtracting, the steps of:

detecting an estimate of a second spreading code's symbols from said data sequence;

storing the estimate of said second spreading code's symbols in a second register associated with said second spreading code's symbols; and

subtracting a second signal associated with the estimate of said second spreading code's symbols from said modified data sequence.

29. (Original) The interference cancellation method according to claim 26, further comprising the steps of:

a second detecting step for detecting the estimate of said first spreading code's symbols from said modified data sequence using said ICU;

accumulating the estimate of said second detecting step of said first spreading code's symbols to said first register associated with said first spreading code's symbols; and

subtracting a third signal associated with the estimate of said second detection of said first spreading code's symbols from said modified data sequence.

30. (Currently Amended) An interference cancellation system for canceling interference on a data sequence, said system comprising:

a first register and a second register for temporarily storing said data sequence;

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a switch coupled between said first register and said second register for transferring said data sequence from said first register to said second register at predetermined time intervals;

an interference cancellation unit (ICU) coupled to an output of said second register for receiving the data sequence and detecting estimates of spreading codes' symbols;

output registers for storing the estimates of said spreading codes' symbols, each of said output registers being associated with one of said spreading codes' symbols, said output registers being adapted to accumulate subsequent estimates of said spreading codes' symbols; and

subtraction means for subtracting signals associated with the estimates of said spreading codes' symbols from said data sequence, thereby removing the influence of the estimates of said spreading codes' symbols from said data sequence.

31. (Original) The system according to claim 30, wherein said signals associated with the estimates of said spreading codes' symbols are respread versions of the estimates of said spreading codes' symbols.
